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Toward Greater Understanding of the Relationship between Public Perceptions of Speed, Speed Laws, and Safety

Frank Douma

Frank Alarcon

Humphrey School of Public Affairs
University of Minnesota

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FINAL REPORT

Prepared by:

Frank Douma, MA, JD
Director, State and Local Policy Program
Hubert H. Humphrey School of Public Affairs
University of Minnesota

Frank Alarcon
Research Assistant, State and Local Policy Program
Hubert H. Humphrey School of Public Affairs
University of Minnesota

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EXECUTIVE SUMMARY

Speed continues to be a leading factor contributing to traffic crashes, injuries, and fatalities in the United States, implicated in over 9,500 traffic deaths in 2015. Despite the persistent threat to safety posed by speed, some states have moved toward higher speed limits and more lenient speed regimes in recent years. The apparent contradiction between the ongoing safety challenges associated with speed and the loosening of state speed laws led to this study. A public choice problem may help explain the contradiction: Voters, lacking awareness of the dangerous implications of permissive speed laws and enforcement practices, are not demanding effective speed enforcement regimes of their elected officials, and thus government authorities are not implementing high-quality speed enforcement regimes.

To explore this dilemma, this research attempts to ascertain whether there is a relationship between state speed laws, speed-related crashes, and public perceptions of speed in the six states that comprise U.S. Department of Transportation Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin). To explore this possible relationship, this report examines three bodies of data from Region 5 states: state speed laws, crash data, and survey data of driver perceptions and attitudes related to speed. Ultimately, the authors have determined that better data are needed for definitive conclusions to be made regarding a possible relationship between these three bodies of data. Specifically, the authors recommend:

- Greater coordination between states to produce more uniform speed laws that establish more consistent speed limits and punishments for violators of speed laws
- The development of a nationally-accepted method for measuring the certainty of punishment for speed law violations in each state
- The adoption of a standard method across states for reporting “speed-related” crashes, injuries, and fatalities
- The deployment of a national survey repeated on regular intervals that measures public attitudes toward and perceptions of speed and speed laws, carried out with a representative sample of motorists in each state to enable cross-state comparisons

This report suggests that implementation of the recommendations above could initiate a virtuous cycle. With better data that facilitate comparisons across state lines, researchers would be able to identify specific gaps in public knowledge and weaknesses in laws and enforcement practices that contribute to the country’s alarming rate of speed-related traffic crashes, injuries, and deaths. This could help dismantle the public choice problem in which the public does not demand high-quality speed enforcement of elected officials, thus enabling the establishment of more effective speed enforcement regimes across the U.S.

CHAPTER 1: INTRODUCTION

Speed continues to be a leading contributing factor in traffic crashes, fatalities and injuries in the United States. In 2015, over 9,500 people died in speed-related crashes, accounting for 27% of total traffic fatalities (1). Speeding is the leading factor contributing to fatal crashes, causing approximately the same impact as distracted driving and driving under the influence of drugs, alcohol and medication combined (2).

Part of the way states regulate speed is through laws that establish maximum speeds for particular roadway types and define punishments for drivers who exceed speed limits (3). Despite the persistent threat to safety posed by speed, some states have recently adopted laws that have weakened their speed enforcement regimes, such as raising speed limits (4). The apparent contradiction between the ongoing safety challenges associated with speed and the loosening of state speed laws led to this study.

Public perceptions of speed may help explain recent movement away from strict speed regulation. In a 2011 NHTSA survey, just 48% of respondents agreed that speed limits should be enforced all the time. Similarly, less than half (48%) of respondents stated that it was “very important that something be done to reduce speeding on the nation’s roadways” (5). While 48% is not insignificant, it illustrates that over half of people are not especially concerned about speed. This lack of concern appears to be related to lax speed laws and enforcement.

In this study, the authors focus on the six states comprising the U.S. Department of Transportation’s Region 5: Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. The authors attempt to ascertain whether a relationship exists between a state’s speed laws, its roadway fatality rates, and public perceptions of speed by examining each state’s speed laws and crash data, as well as survey data on public perceptions of speed. As discussed below, better data will be required before definitive conclusions can be made.

CHAPTER 2: LITERATURE ON PUBLIC PERCEPTIONS AND POLITICAL BEHAVIOR RELATED TO SPEED

Literature across several disciplines suggests that many people are not concerned about the safety risks associated with speed, and that politicians are motivated by a desire to win re-election and thus have an incentive to make policy reflective of public nonchalance toward speed. There is also evidence that policymakers receive more lobbying for higher speeds than lower speeds. Together, these circumstances seem to sustain an environment that is not likely to produce speed regimes that carry sufficiently certain and severe punishments to meaningfully address safety challenges associated with speed.

David Mayhew's 1974 book *Congress: The Electoral Connection* offers insight into why politicians often favor lenient speed laws. Mayhew argues that the principal motivation of members of Congress is winning reelection, and thus, their actions can be interpreted as attempts to secure electoral success (6). Though Mayhew solely examines federal lawmakers, his notion of the electoral incentive may apply to elected officials at the state level who are primarily responsible for speed regulation in the U.S. When the public demonstrates ambivalence toward the safety risks of speed, but is hungry for economic development, policymakers act according to their electoral incentive to favor mobility over safety.

Ritchey and Nicholson-Crotty (2011) found that the most effective speed laws carry punishments that are sufficiently certain and severe to deter drivers from traveling at unsafe speeds. The researchers, investigating why the literature on the relationship between speed and safety offered conflicting findings, considered deterrence theory—the notion “that crime is likely to occur when the expected gain from illegitimate activity is higher than the costs.” They concluded that “lower speed limits can save lives when the mix of enforcement and fines in a state are set appropriately high to deter individuals from violating that limit” (7).

While foreign populations sometimes hold different attitudes than the U.S. public, a number of studies from overseas offer additional insight into how public perceptions and other political factors influence speed regimes in Western democracies. Fleiter and Watson (2006) surveyed Queensland motorists to explore the “apparent paradox in relation to the mismatch between beliefs and behaviors, in that drivers may subscribe to one belief (that speeding is wrong or dangerous) yet regularly exceed the posted speed limit”. Two-thirds of respondents expressed the belief that exceeding the speed limit is not okay, yet 58.4% stated a preference for exceeding the 100 km/hour speed limit (8). Many of the results echoed the findings of the 2011 NHTSA survey discussed above.

Johansson-Stenman and Martinsson (2005) analyzed two surveys from Sweden—one about speed limit preferences and one about voting behavior—to determine how perceptions and self-interest relate to attitudes toward speed limits. Their research concluded that “variables reflecting self-interest are important in explaining people's preferred speed limits”. For instance, drivers who break speed limits and drivers who believe themselves to be superior drivers prefer higher speed limits. Most people were found to believe that other people vote predominantly in their self-interest, yet, most people “consider themselves to be influenced roughly equally by their own interests and by those of society as a whole”

(9). Thus, people who prefer higher speed limits for mostly self-interested reasons may fail to acknowledge the self-interested nature of their preferences.

Hrelja, Summerton and Svensson (2014) examined the process of setting speed limits in one Swedish county. Through interviews with politicians, planners and other officials, they identified two conflicting perspectives: the mobility perspective, which prioritizes economic development through the reduction of travel times, and the safety perspective, which favors lower speeds to promote safety. The mobility perspective was embraced predominantly by “municipal politicians, politicians and strategic planners in the Regional Development Council, officials in the County Administrative Board, and the former SRA’s [Swedish Road Administration, now the National Transport Administration] traffic engineers and strategic planners”, while those embracing the safety perspective tended to be “traffic planners in municipalities and traffic safety engineers at the former SRA”. Tellingly, “...all of the interviewed municipal politicians expressed critical perspectives on Vision Zero [Sweden’s program to eliminate traffic deaths] on the grounds that there is a clear risk that road safety is prioritized too strongly in relation to mobility”. The authors conclude that the “lines of argumentation do not follow organizational boundaries, but rather coincide with specific responsibilities and mandates”. They also point out that even though local politicians carry both the responsibilities of promoting economic development and safety, these officials demonstrate a greater commitment to economic development, even at the expense of safety. Importantly, the researchers observe that those embracing the mobility perspective wield more decision-making power than adherents to the safety perspective (10).

Lobbying may also push politicians to deemphasize traffic safety. Writing about political battles for stronger traffic safety laws in the U.K., safety expert Jeanne Breen observes that “[t]he lengthy campaigns for many injury prevention measures show that political decisions are not made merely on the basis of good evidence.” Breen characterizes opponents of evidence-based traffic safety laws as “proponents of political philosophies that undermine health at the expense of economic considerations,” “vociferous minorities perceiving state interference with civil liberties” and “vested commercial interests” (11). Relatedly, a Norwegian study found that politicians and other decision-makers in the road sector are the recipients of “much more lobbying for mobility than for safety” (12).

The literature paints a picture of a flawed policymaking environment: a public with ambivalent attitudes about speed that translate to little political pressure for high-quality speed regimes, politicians motivated by a desire to win reelection and thus behaving consistently with public ambivalence toward speed, and a lobbying landscape in which those favoring higher speeds overwhelm safety advocates.

CHAPTER 3: RECENT TRENDS IN SPEED LAWS IN THE UNITED STATES

Recent developments in the U.S. suggest the existence of the flawed system described in the previous section.

3.1 THE NATIONAL MAXIMUM SPEED LAW AND ITS REPEAL

The United States' experience with the National Maximum Speed Law (NMSL) demonstrates that the political system favors higher speeds, except perhaps amid political crisis. The NMSL, which capped highway speed limits at 55 mph, was a provision of a 1974 federal law intending to reduce fuel consumption amid the global energy crisis (13).

Despite evidence that the NMSL saved thousands of lives by lowering speed limits (13), opposition was widespread (7). In 1987, Congress amended the NMSL to allow speed limits up to 65 mph on rural interstate highways. State legislatures responded swiftly; in 1987 alone, 38 states raised speed limits on rural interstates (14). In 1995, Congress repealed the NMSL. Since repeal, every state has raised speed limits on rural highways, and most have raised limits on urban highways (13). Friedman, Hedeker and Richter (2009) analyzed fatality data on U.S. roadways before and after NMSL repeal, concluding that a 3.23% increase in roadway fatalities was attributable to the speed limit increases that followed NMSL repeal (13).

3.2 TODAY: A PATCHWORK OF STATE SPEED LAWS

Recently, states have moved in different directions on speed, and maintain speed regimes that differ substantially.

3.2.1 Maximum Speed Limits

There is a patchwork of maximum speed limits across the country (15). South Dakota, Idaho, Wyoming and Utah are among states that have raised their maximum speed limits to 80 mph. Texas allows speeds up to 85 mph (16). Meanwhile, some states—particularly in the eastern half of the country—have not raised their maximum speed limits above 70 mph (15). The result is a patchwork of maximum speed limits across the country.

drivers expected to use a particular facility.” At least on urban highways, AASHTO recommends using design speeds that are higher than running speed. The Green Book accepts the use of the 85th percentile speed as the standard for setting speed limits (20).

The NACTO publication is critical of conventional methods of establishing speed limits and design speeds. In critiquing the 85th percentile method, NACTO argues that “[b]y designing for a faster set of drivers, crashes increase and drivers actually traveling the speed limit are put at risk.” Instead of being guided by operating speed, NACTO advocates selecting a safe “target speed”, then establishing design speeds and posted speed limits at or below that speed (21).

NCHRP’s Report 783 states that “[d]esign speed, posted speed, and the roadway environment should all send a clear and consistent message to drivers about the appropriate speed for the roadway” (22). With a lack of consensus between states and among engineers concerning the correct approach through which to influence speeds, the wide variety of speed regulations in effect throughout the country are difficult to compare. Nevertheless, in the next section, the authors try.

CHAPTER 4: METHODS, DATA AND ANALYSIS

The initial intent of this research was to look for a correlation between the quality of state speed laws, speed-related crash data, and public perceptions of speed among the Region 5 states. The authors discovered that the available data did not enable these three areas to be rigorously compared. This section describes the limited analysis the authors performed with available data.

4.1 REGION 5 STATE SPEED-RELATED LAWS

The authors reviewed the speed, reckless driving, and automated speed enforcement (ASE) laws in each Region 5 state to attempt to rank states by speed regime quality. This revealed a patchwork of laws within the region (Table 1).

Table 1. State Speed-Related Laws (15) (23)

State	Maximum Allowed Speed (mph)	Absolute, Prima Facie, Mixed?	Reckless Driving Law?	Automatic Reckless Driving Speed (mph over limit)	Automated Speed Enforcement?
Illinois	70	Absolute	Yes	30	Yes
Indiana	70	Absolute	Yes	30	No
Michigan	75	Mixed	Yes	Law does not specify	No
Minnesota	70	Mixed	Yes	30	No
Ohio	70	Mixed	Yes	Law does not specify	Yes
Wisconsin	70	Absolute	Yes	25	No

4.1.1 Illinois

Illinois maintains an absolute system of speed limits with a maximum speed of 70 mph (23). Exceeding the speed limit by 26 to 35 mph constitutes a Class B misdemeanor, and exceeding the limit by more

than 35 mph constitutes a Class A misdemeanor (24). Illinois has a reckless driving law that considers driving “with a willful or wanton disregard for the safety of persons or property” a Class A misdemeanor; if the violation results in great bodily harm, the violation is upgraded to aggravated reckless driving (25). Driving more than 30 mph over the speed limit is automatically considered reckless driving (23). Illinois allows ASE in construction zones (26).

4.1.2 Indiana

Indiana maintains an absolute system of speed limits with a maximum speed of 70 mph (23). Exceeding the speed limit constitutes a Class C infraction (27). Indiana has a reckless driving law that considers driving at an unreasonable high or low rate of speed a Class C misdemeanor, which rises to a Class A misdemeanor when the violation causes injury (28). Driving more than 30 mph over the speed limit is automatically considered reckless driving (23). Indiana also maintains an “aggressive driving” law that regards nine unsafe driving behaviors—including unsafe—as Class A misdemeanors (29).

4.1.3 Michigan

Michigan maintains a mixed system of speed limits (23) with a maximum speed that increased in 2017 from 70 to 75 mph (30). This new legislation, opposed by safety groups (31), requires that the speed limit on at least 600 miles of Michigan freeways be raised to 75 mph (32). Michigan has a reckless driving law that considers driving “in willful or wanton disregard for the safety of persons or property” a misdemeanor punishable by imprisonment not exceeding 93 days and/or a fine of up to \$500, and carries a more severe punishment when the reckless driving causes injury (33).

4.1.4 Minnesota

Minnesota maintains a mixed system of speed limits (17) with a maximum speed of 70 mph (15). The state has a reckless driving law that regards driving a “motor vehicle while aware of and consciously disregarding a substantial and unjustifiable risk that the driving may result in harm to another or another's property” as a misdemeanor, which is upgraded to a gross misdemeanor in the event of great bodily harm or death (34). Driving more than 30 mph over the speed limit is automatically considered reckless driving (23). Minnesota maintains a law that exempts speed violation convictions for motorists caught exceeding the speed limit by under 10 mph on a highway; this law has been criticized by scholars as “implying a license to speed” (17). Further muddling Minnesota’s speed regime is a recent experiment with advisory variable speed limits that was minimally understood by motorists (35).

4.1.5 Ohio

Ohio maintains a mixed system of speed limits (23) with a maximum speed of 70 mph (15). Ohio has a reckless driving law that considers driving with “willful or wanton disregard of the safety of persons or property” a minor misdemeanor (36). Ohio allows ASE, though strict limitations apply to deployment (37). Ohio’s 2017 transportation budget authorized variable speed limits on three interstate highways that respond to “time of day, weather conditions, traffic incidents, or other factors” (38).

4.1.6 Wisconsin

Wisconsin maintains an absolute system of speed limits with a maximum speed of 70 mph (39). Wisconsin's speed law does not state the criminal severity of violating the speed limit, but does lay out minimum and maximum fines associated with violations (40). Wisconsin maintains a reckless driving law that defines reckless driving as the "negligent operation of a vehicle" and does not specify the criminal severity associated with violating this law. Driving more than 25 mph over the speed limit is automatically considered reckless driving in Wisconsin (41).

4.1.7 Existing Attempts to Compare State Speed Enforcement Regimes

Few resources exist to compare the quality of state speed enforcement regimes. Perhaps the most comprehensive attempt is a 2016 report prepared by the online personal finance company WalletHub. This report examined each state's primary speeding law and reckless driving law (if applicable) and other aspects of each state's speed regime. Using a point system to assign scores based on certain speed regime characteristics, the WalletHub report scored and ranked all fifty states. Among the Region 5 states, Illinois stood out as the clear leader, ranking fifth overall for the strictness of its regime. The other five Region 5 states ranked between 18th and 41st (23). A limitation of the WalletHub report is that it does not factor in the certainty of punishment. Nonetheless, the WalletHub report is useful in providing a high-level assessment of state speed regimes.

4.1.8 Ranking of Region 5 Speed Enforcement Regimes

The authors' attempt to develop a ranking of state speed regimes is based closely on the Wallethub report's methodology. It is not an exhaustive or comprehensive method of measuring the quality of a state's speed enforcement regime, and the authors encourage further research to develop a rigorous method for this.

The authors adapted the Wallethub methodology by excluding two criteria of the twelve considered in the Wallethub report, then replicating the Wallethub report's points-system evaluation. The two criteria excluded were "Type of Speed Limit" (which assigns two points to states with an absolute limit, one to states with a mixed limit, and zero to a state with a *prima facie* limit), and "Average Increase in Cost of Insurance After One Speeding Ticket" (which assigns more points to states where drivers experience the highest insurance cost increases after a speeding ticket). The former was excluded because the authors do not necessarily agree that an absolute speed limit is stricter than a mixed or *prima facie* limit. The latter was excluded because the insurance premium increase after one speeding ticket is typically not dictated by law. Furthermore, the Wallethub report considered two criteria related to minimum jail time for speed violations for which none of the six Region 5 states received credit; as such, these two criteria also do not appear in our analysis.

After excluding the aforementioned criteria, the authors replicated the Wallethub point system methodology, which yielded results (Table 2) that show Illinois with a stronger speed regime than the rest of Region 5.

Table 2. Ranking of Region 5 States' Speed Enforcement Regimes

State	Points	Criteria Earning Points (# of Points)
Illinois	13.5	Speed Automatically Considered Reckless Driving (1.5), Laws Prohibiting Racing on Highway (1), ASE (3), Speeding Citation Count Toward Suspension (1), Mandatory License Suspension for Reckless Driving (3), Minimum Reckless Driving Fine for 1 st Conviction (2), Minimum Reckless Driving Fine for 2 nd Conviction (2)
Indiana	8.5	Speed Automatically Considered Reckless Driving (1.5), Laws Prohibiting Racing on Highway (1), Additional Penalties for Aggressive Driving (1), Speeding Citation Count Toward Suspension (2), Minimum Reckless Driving Fine for 1 st Conviction (2), Minimum Reckless Driving Fine for 2 nd Conviction (1)
Michigan	6	Laws Prohibiting Racing on Highway (1), Speeding Citation Count Toward Suspension (1), Mandatory License Suspension for Reckless Driving (3), Minimum Reckless Driving Fine for 1 st Conviction (1)
Minnesota	4.5	Speed Automatically Considered Reckless Driving (1.5), Minimum Reckless Driving Fine for 1 st Conviction (2), Minimum Reckless Driving Fine for 2 nd Conviction (1)
Ohio	4.5	Laws Prohibiting Racing on Highway (1), ASE (3), Speeding Citation Count Toward Suspension (0.5)
Wisconsin	4	Speed Automatically Considered Reckless Driving (2), Laws Prohibiting Racing on Highway (1), Speeding Citation Count Toward Suspension (1)

Though imperfect, this ranking offers a high-level assessment of the quality of the speed enforcement regime in the Region 5 states that the authors compared to rankings of crash and public perceptions data, discussed below.

4.2 CRASH AND FATALITY DATA IN REGION 5

The authors intended to make cross-state comparisons of speed-related crash, injury and fatality data, but found that available data did not facilitate such comparisons, an obstacle that will be discussed in greater detail in Chapter 5.

Despite the difficulty of comparing speed-related crash and fatality data across states, there are available data that enable some degree of comparison of state traffic safety outcomes. A 2017 NHTSA research note compares fatalities per 100 million vehicle miles traveled (VMT) in each state. The report also identifies how many of the following eleven effective traffic safety countermeasures each state employs:

- Administrative license revocation or suspension
- Publicized sobriety checkpoint program
- Alcohol interlocks
- Law allowing law enforcement to stop drivers for seat belt violations
- Strengthening child/youth occupant restraint laws
- Automated speed enforcement (ASE)
- Law allowing law enforcement to stop drivers for texting and driving violations
- Motorcycle helmet requirement
- Graduated driver licensing system for new drivers
- Bicycle helmet requirement for children
- “Complete Streets” policy

Only one of the eleven countermeasures (ASE) directly pertains to speed, which led the authors to exclude the countermeasures from the ranking presented in Table 5. The research note found that “[o]verall, States with a higher number of implemented countermeasures were associated with lower...traffic fatality rates,” suggesting that states with higher overall commitments to safety experience better safety outcomes (42). Below are the 2015 fatality rates for the Region 5 states, ranked in ascending order of fatalities per 100 million VMT (Table 3). Also noted in the last column is the number of countermeasures employed by each state, out of the eleven considered by NHTSA.

Table 3. 2015 Fatality Rates and Countermeasures

State	Fatalities/100 Million VMT	Countermeasures
Minnesota	0.68	6
Ohio	0.88	5
Wisconsin	0.91	6
Illinois	0.94	8
Indiana	1	6
Michigan	1	4

The fatality rate per 100 million VMT is similar for five of the six Region 5 states, ranging from 0.88 to 1.00. The outlier is Minnesota, with a much lower rate of 0.68. More variation exists in the number of countermeasures employed by each state. Illinois leads, utilizing eight of eleven countermeasures. Michigan is last, with four countermeasures; this is perhaps unsurprising for a state that recently approved sweeping increases in highway speed limits.

4.3 PUBLIC PERCEPTIONS OF SPEED IN REGION 5

Public perceptions of speed in the Region 5 states was the third body of data examined. The authors were able to obtain surveys of driver attitudes about speed conducted in Minnesota, Wisconsin, and Michigan, but not for Indiana, Illinois or Ohio. The NHTSA survey discussed earlier was stratified by NHTSA's ten regions, not by state (5).

Despite these limitations, the public perceptions data from Minnesota, Wisconsin and Michigan enabled us to perform some comparison. Though the surveys for the three states asked different questions and employed different survey methods, considered together, the results tell a story consistent with much of the literature reviewed above: drivers recognize that speed is a problem and understand that drivers are sometimes cited for speeding, yet many admit to speeding regularly, and many are satisfied with the current level of speed enforcement. Further discussion of the public perceptions of speed data obtained for Michigan, Minnesota and Wisconsin can be found in Appendix A.

Ranking the Region 5 states based on public perception data was difficult due to the lack of consistency between the surveys conducted of drivers in Minnesota, Wisconsin, and Michigan, and the absence of

data from the other three states. However, one common question between the surveys for Minnesota, Wisconsin, and Michigan allowed the authors to rank those states from safest to least safe. This question was some variation of, “Do you consider yourself an above-average driver?” (Table 4). We ranked the states based on the assumption that the lower the percentage of people reporting better than average driving skills, the safer drivers in that state behave. This assumption is consistent with research that suggests that people who believe themselves to be superior drivers tend to prefer higher speed limits (9) (43).

Table 4. Survey Respondents Reporting Better than Average Driving Skills

State	Percent of respondents reporting better than average driving skills
Wisconsin (44)	50%
Minnesota (43)	63%
Michigan (45)	78.7%
Illinois	No comparable data available
Indiana	No comparable data available
Ohio	No comparable data available

4.4 COMPARISON OF THREE STATE RANKINGS

The three rankings compared side-by-side do not reveal a straightforward relationship between Region 5 speed enforcement regimes, fatality rates and survey data (Table 5). This does not mean that no such relationship exists; with better data that facilitates cross-state comparisons, the relationship could be explored more deeply.

Table 5. Side-by-Side Comparison of State Rankings

Rank	Enforcement Regime	2015 Traffic Fatality Rate	Public Perceptions
1	Illinois	Minnesota	Wisconsin
2	Indiana	Ohio	Minnesota
3	Michigan	Wisconsin	Michigan
4	Minnesota (Tie-4)	Illinois	No data
5	Ohio (Tie-4)	Indiana (Tie-5)	No data
6	Wisconsin	Michigan (Tie-5)	No data

CHAPTER 5: SYNTHESIS

Amid a climate of public ambivalence toward speed, state speed laws appear to be created according to a set of political incentives that downplays the safety implications of speed, and without thorough consideration of the importance of maintaining a sufficiently certain and severe speed enforcement regime. Compounding this problem is a lack of consensus regarding the proper relationship between design and posted speed, and significant variation between state speed laws.

5.1 CHALLENGES OF COMPARING THE THREE BODIES OF DATA

Gaps in the available data prevented a rigorous investigation of the relationship between the quality of Region 5 states' speed enforcement regimes, their speed-related crash data, and their speed-related public perceptions data. These gaps represent a barrier to the development of a more empirically-driven regulatory approach to speed. The authors recommend changes to how all three bodies of data are produced and/or collected.

5.1.1 Speed Laws and Enforcement

State speed laws are difficult to compare for several reasons. For one, each state maintains its own categories of criminal offenses. The same bad driving behavior may be classified as a Class A Infraction in one state and a Minor Misdemeanor in another. These two classifications could carry the same or substantially different punishments. Furthermore, some speed-related laws explicitly detail the punishments for violations (usually in terms of jail time and/or the dollar value of fines), while others do not. In short, the confusing nature of current state speed laws presents a barrier to straightforward comparison of these laws. The authors recommend that states move toward more uniform speed laws, which would not only allow researchers to perform more robust comparisons, but also deliver a less confusing patchwork of laws that would likely promote safety by sending more consistent messages to drivers. A move in this direction would be for a respected nonpartisan or bipartisan organization with a record of involvement with transportation safety issues to develop a model speed law for states to use as a blueprint as they work to improve their existing speed laws.

There is also a lack of a widely utilized method for measuring the certainty of punishment for speed violations in each state, which would be beneficial, as certainty of punishment has been identified as a deterrent to speeding (7). Researchers should develop a method to evaluate states for the certainty of punishment for speed violations. This method should take into account both the clarity of speed laws themselves and other factors influencing the certainty of punishment, such as the use of speed countermeasures. The quantity of law enforcement officers enforcing speed laws and government expenditure on speed enforcement are other variables that could be expected to influence the certainty

of punishment, and should be explored.¹ A method for measuring the certainty of punishment for speed violations in each state would enable comparisons between states that would provide valuable feedback to policymakers, law enforcement agencies and the public concerning the quality of their state's speed enforcement regime.

5.1.2 Crash, Injury and Fatality Data

A lack of standardization in how states record speed-related crash data made a comparison of speed-related crashes in the Region 5 states impracticable, and the authors recommend that states develop a standard way to collect and report speed-related crash data. Even data published by NHTSA's Fatality Analysis Reporting System (FARS) did not enable the comparisons the authors intended to make between states. These data reported massive variation in the percentage of total fatalities in each state that were related to speed. For example, FARS data of 2014 speeding-related fatalities report that 10% of fatalities in Florida and 43% of fatalities in Pennsylvania were speed-related (46).

There is a small body of research on the challenge of comparing speed-related crash data across states. A 2017 NTSB study concluded that "law enforcement reporting of speed-related crashes is inconsistent", which leads to underreporting (47). A 2016 study identified inaccuracy stemming from the procedures associated with law enforcement's reporting of the details of the crashes to which they respond (48). One example of a source of inaccuracy is that crash reports prepared by law enforcement officers often include narratives suggesting speed to be a factor, but do not report the role of speed using a speed-related driver contributing code (DCC) (48). A 2015 investigation by the Rapid City Journal examining sudden changes in South Dakota's speed-related crash statistics bluntly concluded that "[t]o decrease the number of speed-related crashes, a state can simply increase the speed limit" (49).

5.1.3 Public Perceptions of Speed Data

Understanding what the public believes about speed and speed-related laws is essential to the development of a more effective speed enforcement regime. The authors believe there is a need for strong, consistent national data regarding motorists' attitudes, perceptions and opinions related to speed and other dimensions of traffic safety. The polling should include a sufficient sample in each state to allow for comparisons across states. An example of a question that would provide value if asked nationwide to a representative sample of motorists in each state is, "How often do you drive faster than 35 MPH on local roads with 30 MPH speed limits?" Similar questions should be asked regarding speed limits on other road types as well. These questions would be similar to those asked in a 2016 Wisconsin survey (50).

¹ NHTSA's 2017 research note "A Comparative Analysis of State Traffic Safety Countermeasures and Implications for Progress "Toward Zero Deaths" in the United States" (42) is an example of a study that examined countermeasures. We are not aware of any studies that consider the quantity of law enforcement officers or government expenditure on traffic enforcement to assess the certainty of punishment for speed violations.

The 2014 study by Hrelja, Summerton and Svensson, which relied on interviews of those involved with speed policy in a Swedish County, offers a model for research into why U.S. politicians often choose to let people drive faster. Important questions related to public perceptions for future research to explore are:

- To what extent is it legislators, and to what extent is it their constituents, that really favor lax speed laws and enforcement?
- Why do legislators seem to believe they are more likely to be re-elected if they water down safety laws, rather than making them more effective?
- What are lawmakers' constituents telling them that makes them believe they are more likely to be re-elected if they water down safety laws?

CHAPTER 6: CONCLUSIONS

The 1963 Bob Dylan song “Who Killed Davey Moore?” recounts the aftermath of the death of the world featherweight champion boxer, who died shortly after losing his title to Sugar Ramos in ten grueling rounds of fighting. In the song, Dylan assumes the persona of different actors—the referee, the crowd, Moore’s manager, gamblers with a stake in the fight, the press, and Mr. Ramos—who played a role in allowing the fight to carry on so long that Moore lost his life. Each actor deflects blame for Moore’s death:

- The referee’s excuse for not ending the fight earlier was that this would have elicited boos from the crowd.
- The fans avoid responsibility by claiming they just wanted to see a good fight.
- Moore’s manager blames Moore for not surrendering earlier.
- Ramos blames the sport, stating that hitting Moore was “what I am paid to do.”
- The reporter covering the fight defends the sport of boxing itself, opining that “fist fighting is here to stay, it’s just the old American way.”

Are heavy roadway casualties “just the old American way”? Similar to the death of Davey Moore, no one culprit is responsible for the United States’ ongoing failures regarding traffic safety. We can’t place all the blame on drivers, as they follow signals conveyed by ambiguous speed regimes that vary widely between states. We can’t fully blame engineers, as they design roads for particular speeds that are sometimes influenced by politics and may be unrelated to posted speed limits. Politicians are not completely at fault, as they behave according to electoral incentives. Can we then blame the electorate, which fails to fully grasp the danger of speed and the need for high-quality speed laws and enforcement? Perhaps, but voters can hardly be faulted for failing to recognize this need as long as civil society fails to convince them of it and the available data do not allow robust analyses of the relationship between laws, safety and public perceptions. With no clear scapegoat, the entire society is implicated.

A lack of consistent and comparable data prevents researchers from conclusively determining the relationship between public perceptions of speed, speed laws, and safety, which appears to feed a culture in which the public values individual freedoms over collective safety. This issue can be addressed on several levels, including transportation professionals as well as politicians and their electorates. On the professional level, the authors are encouraged by recent developments that suggest an emerging approach to speed that prioritizes safety. The NTSB’s recent report, “Reducing Speeding-Related Crashes Involving Passenger Vehicles,” highlights the unintended consequences of setting speed limits using the 85th percentile approach, and encourages the use of alternative methods that consider factors including the presence of people walking and biking, and a road segment’s crash history. The report, like this one, calls for more consistent reporting of speed-related crashes, and also points out that inconsistent reporting can result in underreporting. Additionally, the NTSB advocates for the implementation of ASE and other technologies to reduce speeding (47).

The efforts of professionals, as exemplified in the NTSB report, can also be bolstered on the political level. With speed-related laws, crash data and public perception data that can be more readily compared across states, policymakers could attain a better understanding of how to improve laws and shape public messaging campaigns to increase public awareness of the need for better speed regimes. Public messaging campaigns crafted specifically to address gaps in public understanding of the safety risks of speed could contribute to a virtuous cycle, in which a better-informed electorate pressures its elected officials to support policies that produce yet more consistent and effective speed regimes with sufficiently certain and severe punishments to deter speeding and save lives.

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APPENDIX A

Discussion of Public Perceptions of Speed Data from Michigan, Minnesota and Wisconsin

Michigan

Michigan's 2014 "Driver Attitudes and Beliefs Omnibus Survey", commissioned by the Michigan Office of Highway Safety Planning, was a scientific telephone survey of 600 Michigan drivers. Responses to numerous questions indicate that Michiganders are aware of speed limits and the possibility of receiving a punishment for speeding. 76% of respondents said that if they saw a car stopped by a police officer during the day, their first thought would be that the person was stopped for speeding. Respondents were asked to place the likelihood of getting a ticket when stopped by police on scale of 1-10, with 1 meaning no ticket (just a verbal warning), and 10 meaning ticket. The mean was 6.8, indicating that people think that getting a ticket is more likely than getting a verbal warning. About 67% of respondents believed that police should enforce speed limits more strictly. About 87% believe the speed limits in their community are "just about right".

This conscientious image of the average Michigan driver does not show through in respondents' answers to all the survey's questions, however. Distressingly, 78.7% of respondents strongly or somewhat agreed that they have better driving skills than the average driver. On a similar note, about 62% believed that they were less likely than other drivers to be involved in a crash. As such, the Michigan study paints a seemingly contradictory picture of Michigan drivers: on the one hand, they acknowledged the possibility of being pulled over for speeding (and expected being pulled over to result in a citation, not just a warning) and supported the speed limits in their community. On the other hand, Michigan drivers were likely to see themselves as superior drivers to most of their fellow Michiganders (45).

Minnesota

The 2012 Minnesota Omnibus Transportation Survey included questions about Minnesotans' perceptions of speed violation exceptions, which produced some illuminating results. Other recent studies that inquired into Minnesotans' perceptions, attitudes and knowledge of speed enforcement include the state's evaluation of its High Enforcement of Aggressive Traffic (HEAT) program, and the "2014 High-Risk Driver Analysis" commissioned by the Minnesota Department of Public Safety.

The surveys carried out in 2009, 2010 and 2012 as part of the HEAT evaluation found that "over half of drivers felt they could exceed the posted speed limit by up to five miles per hour without being stopped and nearly one-third said they could drive between six and 15 miles over the speed limit". Furthermore, a large majority (73%) of Minnesota drivers believed that the level of enforcement for speeding was "about right"; just 19% felt that there was not enough speed enforcement. The 2012 Transportation Omnibus Survey found that 98% of respondents expect "some level of exception for speeding violations", and around half reported the belief that citations for exceeding the speed limit by less than 10 miles per hour do not appear on one's driving record (51).

The "2014 High-Risk Driver Analysis" was a "random telephone survey of Minnesotans for the purpose of examining the behaviors of Minnesotans with regard to a variety of risky driving behaviors". The four

risky behaviors examined in the survey were speeding, drinking and driving, texting/using the internet and seat belt violations. The extensive survey found that about 63% of Minnesotans “consider themselves to be above average drivers”. Perhaps more troubling, almost no survey respondents considered themselves to be below average drivers. Similarly, 70% of respondents perceived their likelihood of being involved in a crash to be lower than that of the average driver. That figure was lower (55%) among respondents who admitted to speeding, suggesting that many people who speed perceive a higher likelihood of experiencing a crash than those who do not speed, yet choose to speed anyway.

The 2014 analysis also found speeders to have been historically the most likely type of risky driver to change their behavior. 30% of respondents who said they had not sped recently admitted to speeding regularly at some point in their lives; this was higher than the corresponding figure for the three other types of risky drivers. Likely related to this was the analysis’ finding that “enforcement of speeding laws is a common reason for changing behavior” (43).

Wisconsin

A 2003 “Badger Poll” conducted by the University of Wisconsin Survey Center at the University of Wisconsin, Madison investigated attitudes toward speeding among Wisconsin motorists. The narrative accompanying the survey results concluded that, “When it comes to the issue of speeding [Wisconsin drivers] perceive this as a moderate problem for the state, and there is little groundswell for treating speeding more seriously.” Interestingly, this survey found that concern over drunk driving was much higher than speeding (44).

The Wisconsin Department of Transportation released the summary report of its “NHTSA Performance Measures Survey” in 2016. The purpose of the survey was to measure driver attitudes and knowledge before and after a three-month speed enforcement and public awareness campaign in the summer of 2016. The survey was conducted by mail and generated 485 responses before the campaign, and 457 after it. Each sample was weighted to reflect the gender and age composition of the Wisconsin population.

Similar to the Michigan study, the Wisconsin study points to a driving public that recognizes a high likelihood of speeding drivers facing consequences for their actions. Both before and after the campaign, about 80% of respondents believed that it was somewhat, very or extremely likely that they would get a ticket if they exceeded the speed limit. Furthermore, “A majority of respondents had read, seen, or heard about police speed limit enforcement in the past 30 days”.

This being said, many respondents admitted to exceeding the speed limit with regularity. Of drivers who read about, seen, or heard about speed enforcement in the previous 30 days, 38% reported exceeding speed limit more than 5 mph in a 30 mph zone some or most of the time. This compared to 44% of those who had not read/seen/heard about speed enforcement. This finding would seem to suggest that drivers who have observed speed enforcement in the previous month are less likely to speed, but the pattern did not hold when drivers were asked about their behavior in 65 mph zones (50).

Like the Michigan survey, the 2016 Wisconsin survey tells a nuanced story; Wisconsin drivers are well-aware that exceeding the speed limit leads to citations, yet many admit to speeding regularly.